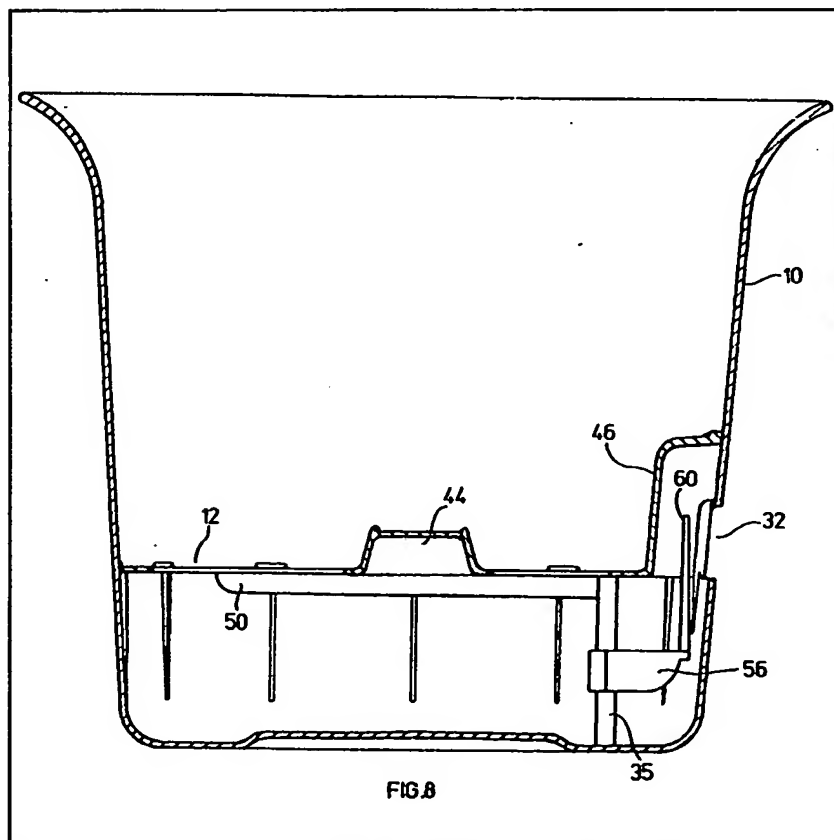


- (21) Application No 8307904
 (22) Date of filing 22 Mar 1983
 (30) Priority data
 (31) 5514/82
 (32) 23 Aug 1982
 (33) Australia (AU)
 (43) Application published
 11 Apr 1984
 (51) INT CL³
 A01G 27/00 9/02
 (52) Domestic classification
 A1E 4 8
 (56) Documents cited
 GB 1533115
 GB 1444834
 GB 1253176
 GB 1170409
 GB 1098155
 GB 0976809
 (58) Field of search
 A1E
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(54) Planters

(57) A self-watering planter includes a planter bowl 10 open at its upper end, a plate 12 adapted to be supported on retaining means integral with the internal side wall of the planter in a plane substantially transverse to the longitudinal axis of the planter bowl, the plate and the planter bowl defining a water reservoir below the plate, an opening 32 in the side wall of the planter bowl for introducing water into the water reservoir, a float guide 35 adapted to extend axially upwardly from the base of the planter bowl and a float 56 operatively connected to the float guide, the float having an indicator 60 extending upwardly towards the opening for indicating through the opening the water level in the reservoir, the plate having at least one opening therein for receiving a wick which extends downwardly into the reservoir and also into the space above the plate.



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The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.

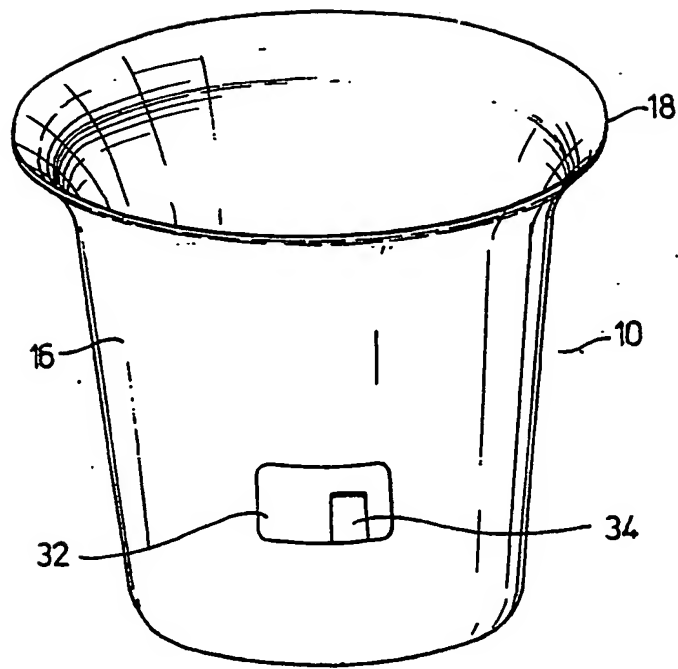


FIG. 1

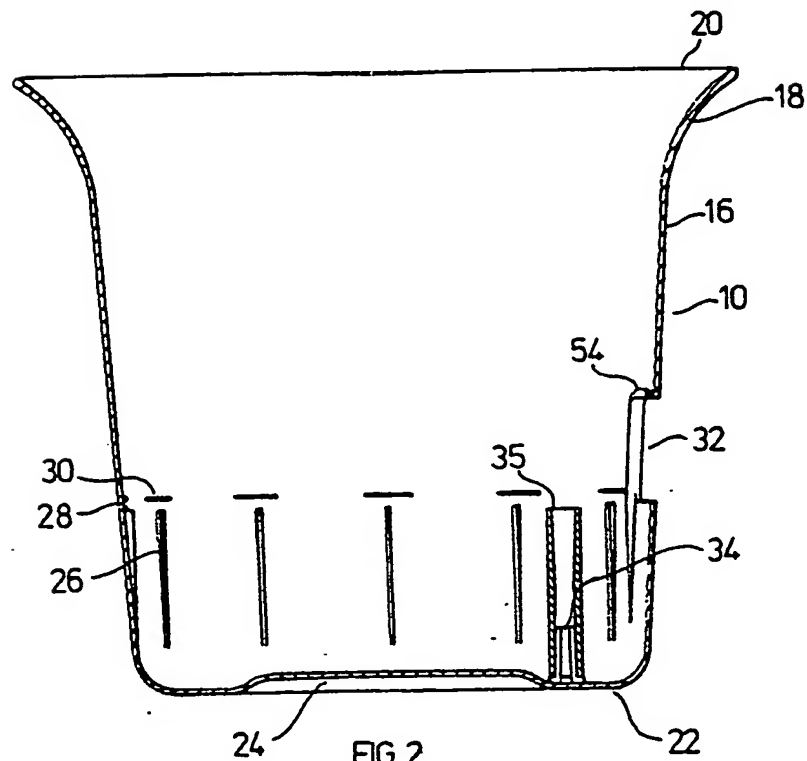


FIG. 2

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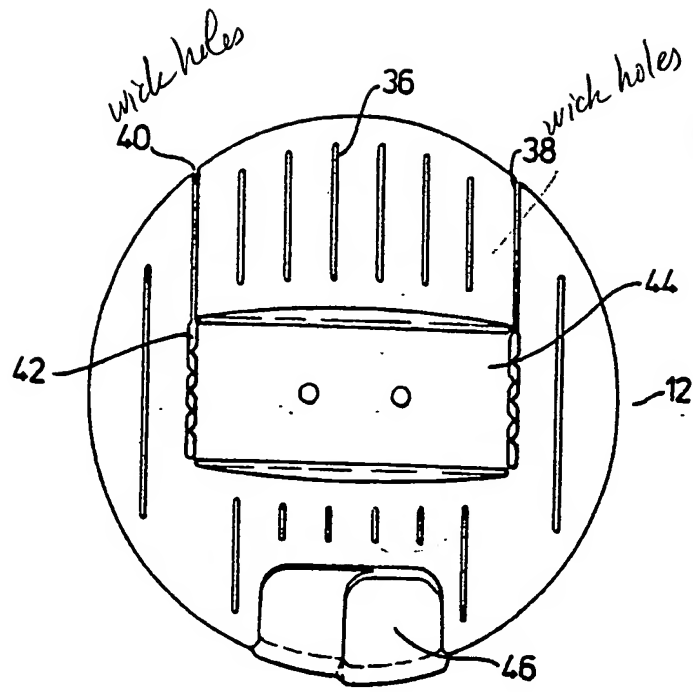


FIG. 3

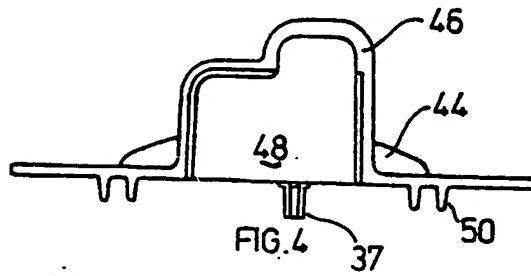


FIG. 4

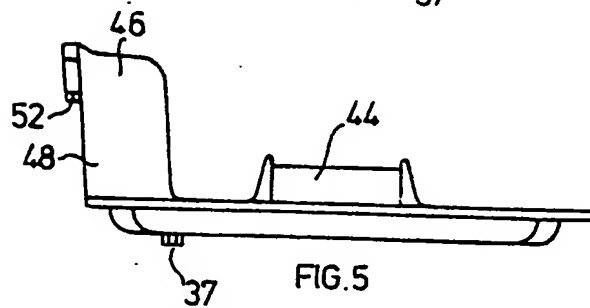


FIG. 5

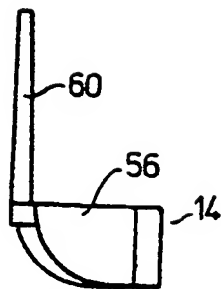


FIG. 6

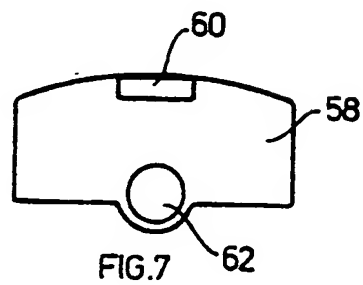


FIG. 7

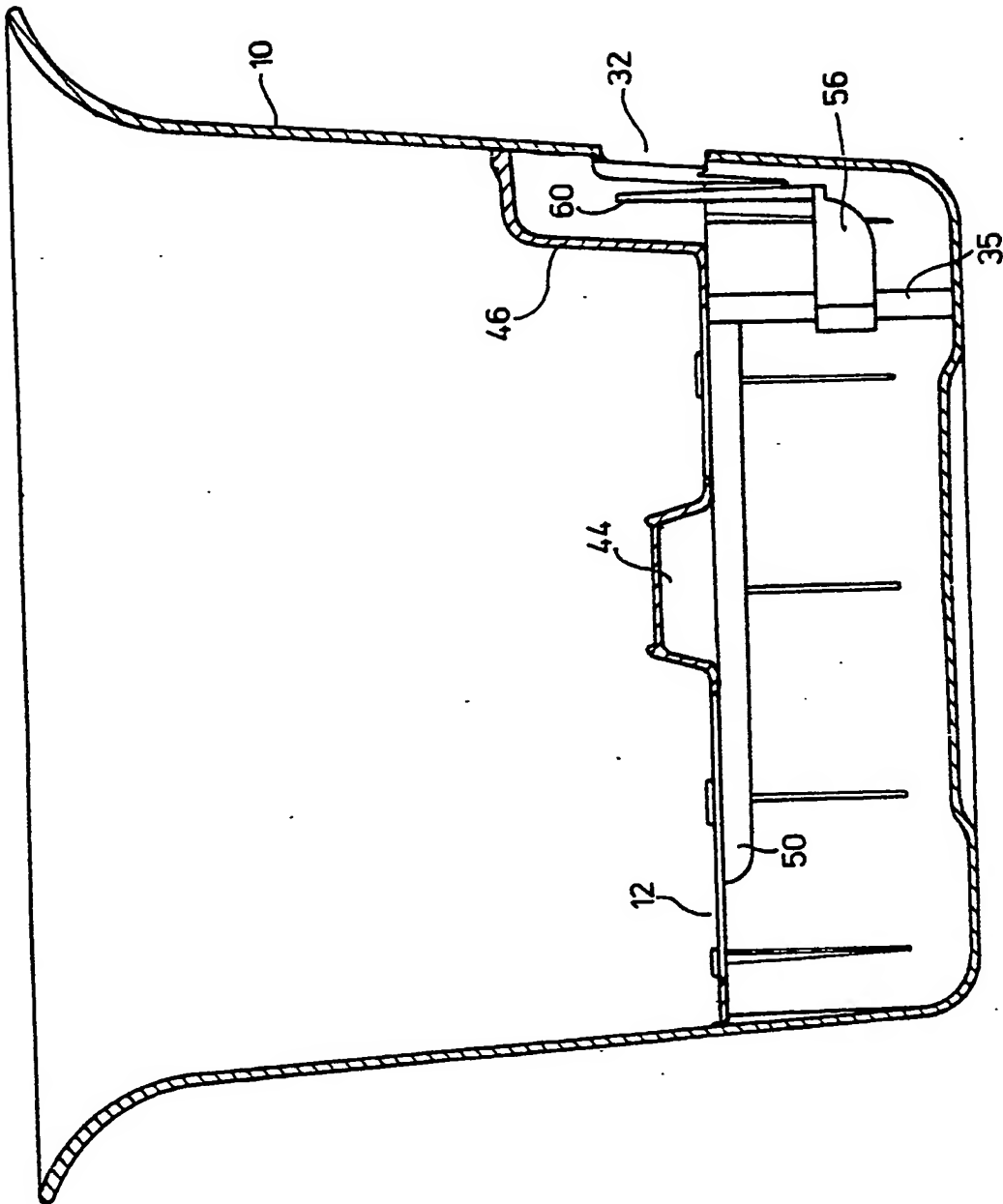


FIG. 8

SPECIFICATION

Planter

5 The present invention relates to improvements in planters and refers particularly, though not exclusively, to improvements in self-watering planters.

Self-watering and hydroponic planters have been known for some time. Both use the principal of
10 capillary action to transfer water from a water reservoir to the soil or stones, as the case may be. In most cases, some form of wick is used to enable the capillary action to take place. For hydroponic planters, quite often a cartridge is also used to add the
15 required nutrients to the water. These cartridges require regular replacement.

Due to their technical requirements, such as those outlined above, many self-watering planters and hydroponic planters are complex in their construction, difficult to use, and unwieldy in their operation.
20 Some even look more like a machine than a planter.

It is therefore the principal object of the present invention to provide a planter of the abovementioned types which is of relatively simple construction and is relatively easily used.

With the above and other objects in mind, the present invention provides a planter including a planter bowl being open at its upper end, a plate adapted to be placed in a predetermined location in
30 said planter bowl in a plane substantially transverse to the longitudinal axis of the planter bowl, retaining means integral with the internal side wall of said planter for holding the plate in said predetermined location, said plate and said planter bowl defining a water reservoir below said plate, an opening in the
35 side wall of said planter bowl to enable water to flow into said water reservoir, a float guide adapted to extend axially upwardly from the base of said planter bowl, and a float adapted to be operatively
40 connected to said float guide, said float having an indicator extending upwardly towards said opening for indicating via said opening the water level in said reservoir; said plate having at least one opening therein to allow a wick to be placed therethrough,
45 said wick being adapted to extend downwardly into said reservoir.

In order that the invention may be clearly understood there shall now be described by way of non-limitative example only a preferred construction
50 of a planter incorporating the principal features of the present invention, the description being with reference to the accompanying illustrative drawings. In the drawings:

Figure 1 is a perspective view of the planter;

55 *Figure 2* is a vertical cross-sectional view of the planter bowl;

Figure 3 is a plan view of the plate;

Figure 4 is a side view of the plate;

Figure 5 is an end view of the plate;

60 *Figure 6* is a side view of the float;

Figure 7 is a plan view of the float; and

Figure 8 is a vertical cross-sectional view of the assembled planter.

To refer to the drawings, there is shown a planter
65 of the self-watering type and which includes a

planter bowl 10, a plate 12 and a float 14.

The planter bowl 10 is a one-piece unit and preferably is made as a moulding of a plastics material. The planter bowl 10 has a curved side wall
70 16 which flares radially outwardly at its upper end 18. The top 20 of the bowl 10 is open. The base 22 of the bowl 10 is integral with the side wall 16 and has a raised central portion 24 which allows the planter bowl 10 to be securely located on a flat surface.

75 Projecting inwardly from the side wall 16 adjacent its lower end are a number of plate supports 26. These supports 26 have a flat upper surface 28 which support the plate 12 when it is inserted. If desired, there may be provided a number of radially inwardly
80 directed lugs 30 which co-operate with the supports 28 so that the plate 12 is held in place, preferably by means of a "snap" fit.

The side wall 16 has a single opening 32 therethrough. The opening 32 is located axially above the supports 26 and is designed to allow water to be
85 poured therethrough into the bowl 10, to enable an indicator attached to the float 14 to be seen so that a user can ascertain the level of the water in the bowl 10, and to enable a user to remove a plate 12 by
90 placing a finger through the opening 32 and pressing upwardly on the plate 12.

Extending upwardly from the base 22 is a retaining lug 34 adapted to hold in place a float guide 35. This guide 35 is in the form of a cylinder and functions in
95 a way which will be understood from the following description.

The plate 12 is also a one-piece unit and, like the bowl 10, is preferably made as a moulding of a plastics material. The plate 12 is substantially circular with its diameter being approximately the same
100 as the internal diameter of the planter 10 at the location of the plate supports 26. The plate has a number of parallel slots 36 therethrough which are designed to allow water to pass therethrough and
105 into the lower regions of the bowl 10; to allow roots of a plant in the planter to pass therethrough to enable them to seek the water in the lower regions of the bowl 10; and to allow aeration and humidification of the soil or the like in the bowl 10 above the
110 plate 12.

Two of the slots 38, 40 extend to the edge of the plate 12. This is to enable the plate 12 to be temporarily deformed to enable a wick (not shown) to be passed along the slots 38, 40 until it reaches the
115 innermost end of those slots 38, 40 whereon the crimping effect created by the "saw-tooth" like effect of edges 42 of slots 38, 40 retains the wick in position. To provide adequate surface contact between the wick and the soil, there is provided an arcuate ramp 44 extending between the slots 38 and
120 40. The wick is passed over the ramp 44 and is retained by the edges 42 of slots 38 and 40. The free ends of the wick extend below the plate 12 to the base 22 of bowl 10 so that water is carried up the
125 wick by capillary action to provide moisture for the soil. The crimping effect of edges 42 will assist in reducing the flow of water up the wick and extend the watering period of the planter.

The plate 12 is provided with a housing 46 which
130 acts to deflect water entering the bowl 10 through

opening 32 downwardly so that it passes to the lower regions of the bowl 10. In this way, a reservoir is created in the bowl 10 between its base 22 and the plate 12. The housing 46 also acts as a guide and backdrop for the indicator attached to the float 14. The housing 46 has an opening 48 which is aligned with the opening 32 to enable this to happen.

Extending downwardly from the plate 12 are two parallel pairs of parallel ribs 50 which are co-axial with the slots 38, 40. The ribs 50 serve as supporting and strengthening devices as well as assisting in locating the plate 12 relative to the bowl 12. To further assist the correct locating of the plate 12 in the bowl 10, the housing 46 has an undercut 52 which co-operates with a small projection 54 on the side wall 16 of bowl 10 adjacent the opening 32.

Also extending downwardly from the plate 12 is a lug 37 designed to fit into the top of the float guide 35. This accurately locates the plate 12 in the bowl 10. The float guide may be solid or, preferably, hollow. If hollow, air can enter through its top and water escape through its bottom. This prevents water collecting inside the guide 35 and becoming stagnant or sour and thus adversely affecting any other water and thus the plant concerned. Alternatively, the guide 35 could be made integral with the bowl 10 and the lug 34 eliminated.

The float 14 has a floating portion 56 which is less dense than water and will thus float on water. A blow moulding or expanded foam would be suitable for this purpose. The floating portion 56 is attached to the underside of a float plate 58 from which extends an indicator 60. Passing through the plate 58 and floating portion 56 is a tube 62 through which passes the float guide 35. The arrangement of the float 14 is such that it rests on the base 22 of bowl 10 when there is no water in the bowl 10. In this position the top of the indicator 60 may not be directly visible through the opening 32. Allowing for the displacement of the float 14, as water is passed into the bowl 10 the floating portion 56 causes the entire float 14 to rise with the float guide 35 preventing all movement other than movement in the axial direction. As the float 14 rises the indicator 60 comes into view through the opening 32. When the reservoir under the plate 12 is full the float 14 cannot rise any further due to the float plate 58 contacting the plate 12 and/or the indicator 60 contacting the top of housing 46. At this stage the indicator 60 is clearly visible over the entire height of the opening 32. The reservoir cannot be overfilled as any further water would overflow out through the opening 32. This prevents saturation of soil resting on plate 12 and thus damage to the roots of any plant contained therein.

Whilst there has been described in the foregoing description a preferred construction of a planter incorporating the principal features of the present invention it will be understood by those skilled in the particular technology that many variations or modifications in details of design or construction may be made without departing from the essential nature of the invention, the scope of which is to be determined from a fair reading of the appended claims.

CLAIMS

1. A planter including a planter bowl being open at its upper end, a plate adapted to be placed in a predetermined location in said planter bowl in a plane substantially transverse to the longitudinal axis of the planter bowl, retaining means integral with the internal side wall of said planter for holding the plate in said predetermined location, said plate and said planter bowl defining a water reservoir below said plate, an opening in the side wall of said planter bowl to enable water to flow into said water reservoir, a float guide adapted to extend axially upwardly from the base of said planter bowl, and a float adapted to be operatively connected to said float guide, said float having an indicator extending upwardly towards said opening for indicating via said opening the water level in said reservoir; said plate having at least one opening therein to allow a wick to be placed therethrough, said wick being adapted to extend downwardly into said reservoir.
2. A planter as claimed in claim 1, wherein said plate includes a housing adapted to co-operate with said side wall opening to form an inlet channel for said reservoir and a backdrop for said indicator.
3. A planter as claimed in claim 1 or 2, wherein two openings are provided for said wick to allow both ends of said wick to extend downwardly into said reservoir.
4. A planter as claimed in claim 3, wherein said plate further includes a raised section located between said openings on the face remote from said reservoir, said raised section adapted to be covered by said wick.
5. A planter as claimed in claim 4, wherein said openings adjacent said raised portion crimpingly engage said wick.
6. A planter as claimed in any preceding claim, wherein slots are provided in said plate for aeration.
7. A planter as claimed in claim 4 or 5, wherein said raised section is an arcuate ramp.
8. A planter as claimed in any preceding claim, wherein the lowermost part of said side wall opening is at, adjacent or below the level of said plate.
9. A planter substantially as hereinbefore described with reference to the accompanying drawings.

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